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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,410	08/16/2002	Hans Ahnlund	915-003.7	6921
4955	7590	08/25/2004	EXAMINER	
WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468			PHAN, HUY Q	
			ART UNIT	PAPER NUMBER
			2685	
			DATE MAILED: 08/25/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,410

Applicant(s)

AHNLUND ET AL.

Examiner

Huy Q Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Drawing is objected to because of the following informalities: all boxes 8, 9 and 10 should have descriptive labels.

Appropriate correction is required.

Specification

2. Specification is objected to because of the following informalities: In page 7, lines 13, "Figure 1" should be changed to - -Figure 2- -.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 11, 12 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamel et al. (US-6,496,531).

Regarding claim 1, Kamel et al. disclose a method for operating a radio telecommunications system (fig. 1) comprising a mobile station (30) and one or more cell site units (inherently to base stations 10) capable of communicating by

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radio with the mobile station on at least two communication channels (fig. 1 and col. 3, lines 6-12), the method comprising:

the mobile station receiving signals on each of the communication channels (col. 14, lines 41-49); and

the mobile station determining an estimate of the level of interference (inherently to col. 3, lines 21-26) with signals on each of the communication channels (col. 15, lines 6-9).

Regarding claim 2, Kamel et al. disclose a method as recited in the rejection of claim 1, comprising the step of transmitting to the mobile information specifying the communication channels (col. 14, lines 50-58 and col. 3, lines 21-34).

Regarding claim 3, Kamel et al. disclose a method as recited in the rejection of claim 2, wherein the said information specifies a frequency for each of the communication channels (col. 3, lines 63-67).

Regarding claim 4, Kamel et al. disclose a method as recited in the rejection of claim 3, wherein the said step of receiving comprises receiving signals on communication channels whose carrier frequencies are specified by the said information (col. 3, lines 63-67).

Regarding claim 5, Kamel et al. disclose a method as recited in the rejection of claim 1, comprising the step of the mobile station transmitting to a cell site unit information indicating the estimated levels of interference with signals on at least two of the communication channels (col. 6, lines 48-67 and col. 7, lines 33-36).

Regarding claim 6, Kamel et al. disclose a method as recited in the rejection of claim 1, wherein the mobile station is in traffic communication on a traffic communication channel (col. 14, lines 50-58), the telecommunications system comprises a handover controller (inherently to the mobile switching center see col. 2, line 65-col. 3, line 5) for controlling handover of the mobile station from the current communication channel to another one of the communication channels, and the method comprises the steps of:

the mobile station communicating to the handover controller via the current cell site unit information indicating the estimated levels of quality with signals on at least two of the communication channels (col. 14, line 50-col. 15, line 36); and

the handover control unit determining to which of the cell site units to hand over traffic communication of the mobile station on the basis of at least that information indicating the estimated levels of interference (col. 6, line 48-col. 7, line 36).

Regarding claim 7, Kamel et al. disclose a method as recited in the rejection of claim 6, wherein the step of the handover control unit determining comprises determining to which communication channel of one of the cell site units to hand over traffic communication of the mobile station on the basis of at least that information indicating the estimated levels of interference (col. 6, line 48-col. 7, line 36).

Regarding claim 8, Kamel et al. disclose a method as recited in the rejection of claim 7, wherein the handover control unit determines to hand over to a channel having one of the lowest estimated levels of interference (inherently to the strongest signal strength see col. 6, line 48-col. 7, line 36).

Regarding claim 11, Kamel et al. disclose a mobile station for operation in a telecommunications system (fig. 1) comprising at least two cell site units (inherently to base stations 10) each capable of communicating by radio with the mobile station (30) on at least two communication channels having different frequencies (fig. 1 and col. 3, lines 6-12); the mobile station (30) comprising:

a receiver (64) capable of receiving signals from a cell site units (10) on a communication channel (fig. 1 and col. 3, lines 6-12);

an interference estimation unit (inherently to measurer 62) for estimating the level of interference on a communication channel on which the receiver receives signals (col. 3, lines 20-34); and

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a channel analysis unit (inherently to processor 70) coupled to the receiver and the interference estimation unit for causing the receiver to receive signals from each of the cell site units on each of the respective communication channels in turn and receiving from the interference estimation unit an estimate of the level of interference on each of those channels (col. 3, lines 13-20).

Regarding claim 12, Kamel et al. disclose a mobile station as recited in the rejection of claim 11, wherein the interference estimation unit is capable of estimating the level of interference by performing an error correction and/or signal recovery operation on received signals (col. 8, line 58-col. 9, line 25).

Regarding claim 18, Kamel et al. disclose a mobile station as recited in the rejection of claim 11, wherein the channel analysis unit is capable of receiving via the receiver information specifying the said communication channels (col. 3, lines 13-33 and col. 9, lines 17-25).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. in view of Lee (US-5,369,798).

Regarding claim 9, Kamel et al. disclose a method as recited in the rejection of claim 1. But, Kamel et al. do not particularly show wherein the mobile station stores an indication of a timing of the said signals on at least one of the communication channels and the mobile station interrupts another operation to receive the said signals at a time dependent on the stored indication of a timing. However in analogous art, Lee teaches wherein the mobile station stores an indication of a timing of the said signals on at least one of the communication channels and the mobile station interrupts another operation to receive the said signals at a time dependent on the stored indication of a timing (col. 1, line 51-col. 2, line 13). Since, Kamel et al. and Lee are related to the method for channel switching in wireless communications system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Kamel et al. by specifically having wherein the mobile station stores an indication of a timing of the said signals on at least one of the communication channels and the mobile station interrupts another operation to receive the said signals at a time dependent on the stored indication of a timing as taught by Lee for purpose of saving advantageously the power consumption of mobile station.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. in view of Lee and further in view of Werronen (5,440,561).

Regarding claim 10, Kamel et al. and Lee disclose a method as recited in the rejection of claim 9. But, Kamel et al. and Lee fail to expressly teach wherein the indication of a timing is an indication of the difference in timing between signals on the said communication channels. However in analogous art, Werronen teaches wherein the indication of a timing is an indication of the difference in timing between signals on the said communication channels (col. 5, lines 55-58). Since, Kamel et al., Lee and Werronen are related to the method for channel switching in wireless communications system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Kamel et al. and Lee by specifically having wherein the indication of a timing is an indication of the difference in timing between signals on the said communication channels as taught by Werronen for purpose of determining the time difference between two received signals in order to control the interruptive communication when received signals being switched.

7. Claims 13-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. in view of Richardson et al. (US-5,369,637).

Regarding claim 13, Kamel et al. disclose a mobile station as recited in the rejection of claim 12. But, Kamel et al. fail to expressly teach wherein the said operation is performed on a training sequence of the received signals. However in analogous art, Richardson et al. teach wherein the said operation is performed on a training sequence of the received signals (col. 4, line 66-col. 5, line 7). Since, Kamel et al. and Richardson et al. are related to the method for the signal

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transmission system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Kamel et al. by specifically having wherein the said operation is performed on a training sequence of the received signals as taught by Richardson et al. for purpose of making possible in estimating advantageously the multi-path channel by the mobile station.

Regarding claims 14 and 17, Kamel et al. and Richardson et al. disclose a mobile station as recited in the rejections of claims 13 and 12 respectively. Richardson et al. further disclose wherein the interference estimation unit comprises a Viterbi equalizer (col. 5, lines 2-5).

Regarding claim 15, Kamel et al. and Richardson et al. disclose a mobile station as recited in the rejection of claim 14. Kamel et al. disclose wherein the channel analysis unit is capable of receiving via the receiver information specifying the said communication channels (col. 3, lines 13-33 and col. 9, lines 17-25).

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. in view of Werronen and further in view of Lee.

Regarding claim 16, Kamel et al. disclose a method for operating a radio telecommunication system (fig. 1) comprising a mobile station (30) and one or more cell site units (inherently to base stations 10) capable of communicating by

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radio with the mobile station on at least two communication channels (col. 14, lines 41-49); the method comprising: the mobile station receiving signals on one of the communication channels (col. 14, lines 41-49).

But, Kamel et al. do not explicitly show the mobile station storing an indication of the timing difference between signals on the communication channels and the mobile station interrupting said receiving in order to receive signals on another of the communication channels at a time dependent on the stored indication. However, Werronen teaches storing an indication of the timing difference between signals on the communication channels. Since, Kamel et al. and Werronen are related to the method for the channel switching in wireless communications system (col. 5, lines 55-58); therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Kamel et al. by specifically storing an indication of the timing difference between signals on the communication channels as taught by Werronen for purpose of determining the time difference between two received signals in order to control the interruptive communication when received signals being switched.

Both Kamel et al. and Werronen fail particularly disclose wherein the mobile station interrupting said receiving in order to receive signals on another of the communication channels at a time dependent on the stored indication. However in analogous art, Lee teaches the mobile station interrupting said receiving in order to receive signals on another of the communication channels at a time dependent on the stored indication (col. 1, line 51-col. 2, line 13). Since,

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Kamel et al., Werronen and Lee are related to the method for channel switching in wireless communications system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Kamel et al. and Werronen by specifically having the mobile station interrupting said receiving in order to receive signals on another of the communication channels at a time dependent on the stored indication as taught by Lee for purpose of saving advantageously the power consumption of mobile station.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Yano et al. (US-6,711,149) disclose a method for handover.
- b) Toshiyuki et al (US-5,093,924) disclose a method for channel assignment.
- c) Andersson et al. (US-5,594,949) disclose a method for channel allocation.
- d) Hottinen et al. (US-5,995,499) disclose a TDMA system.
- e) Haartsen (US-5,491,837) discloses a method for channel allocation.
- f) Ueda (US-5,606,727) discloses a method for channel assignment.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Q Phan whose telephone number is 703-305-9007. The examiner can normally be reached on 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Urban F Edward can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phan, Huy Q

AU: 2685

Date : Aug. 20, 2004



NICK CORSARO
PRIMARY EXAMINER